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Economic consequences for the Danish fishing industry of changing the EU tariff quota on prepared and preserved herring from Norway

The purpose is to assess the economic and employment consequences for the Danish companies of changing the tariff quota¹ on prepared and preserved herring imported to the European Union (EU) from the main supplier Norway.

The increase in tariff quota in an import area, such as EU, represents trade liberalization and will increase the total supply. Given a substantial supply increase, the prices will decrease. This brings an advantage for the consumers in EU, while it usually is a disadvantage for the producers in the EU. The reason is that external producers are able to sell their products with a lower price, and products produced in the EU become relative more expensive. Consequently, the producers within the EU, which are not dependent on imports of raw materials with tariffs, will obtain a lower price for their commodities. On the other hand, producers that base their production on imported raw materials with tariffs can both gain and lose. The increase in tariff quota increases the possibility to gain from a larger production of goods, while a potential decrease in price will lower the marginal profit. A reduction of the tariff quota has the opposite effect.

A potential increase of the tariff quota on prepared and preserved herring (whether packed hermetically closed or not)² is, therefore, an advantage for the consumers in the EU and for foreign companies that export herring into EU. The tariff quota can both become an advantage and a disadvantage for the Danish companies that base their production on imported raw materials. In the current paper it is assumed that prices remain unaffected.

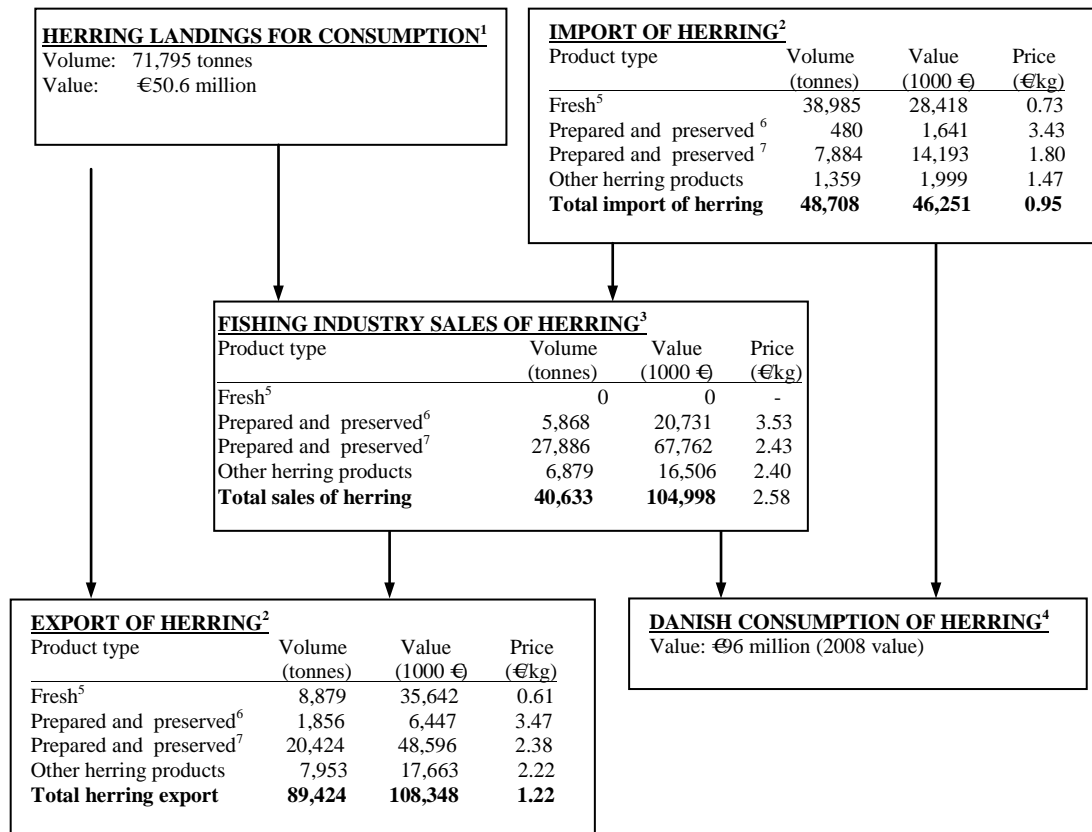
Trade flows

The international herring market is supplied from Northern Europe with Norway being the largest supplier based on the Atlantoscandic stock. EU countries, including Denmark, also have significant fisheries. The market is in Northern and Eastern Europe, and Russia. Norway supply Eastern Europe and Russia, where Denmark supply mainly the large market in Germany with products such as pickled herring. Some intermediate processing takes place in Poland. The production chain of herring in Denmark is shown in Figure 1.

¹ A tariff quota specifies a limited quantity that can be imported at a reduced tariff rate. When the quota is used, importers must pay the full tariff rate. A tariff quota is not the same as an import quota, where import is banned when the quota is used.

² Harmonized System codes no. 16041291 and 16041299.

Figure 1: Production and trade with herring products in Denmark in 2011, trade weight.



Sources: ¹Yearbook of Fishery Statistics 2011. ²Statistics Denmark, Table KN8Y. ³Statistics Denmark, Table VARER1. ⁴Statistics Denmark, consumer survey, 2008. ⁵Commodity number 03024000. ⁶Hermetically closed, commodity number 16041291. ⁷Not hermetically closed, commodity number 16041299.

The herring is either landed in Denmark or imported. In 2011, the import consisted mainly of fresh fish (84% and 64% of total volume and value, respectively), but also prepared and preserved fish account for a considerable amount (13% and 32% of total volume and value). In 2011, the herring products were imported from primarily Norway (59%), Sweden (23%), Germany (9%) and Faroe Island (5%), measured by value.

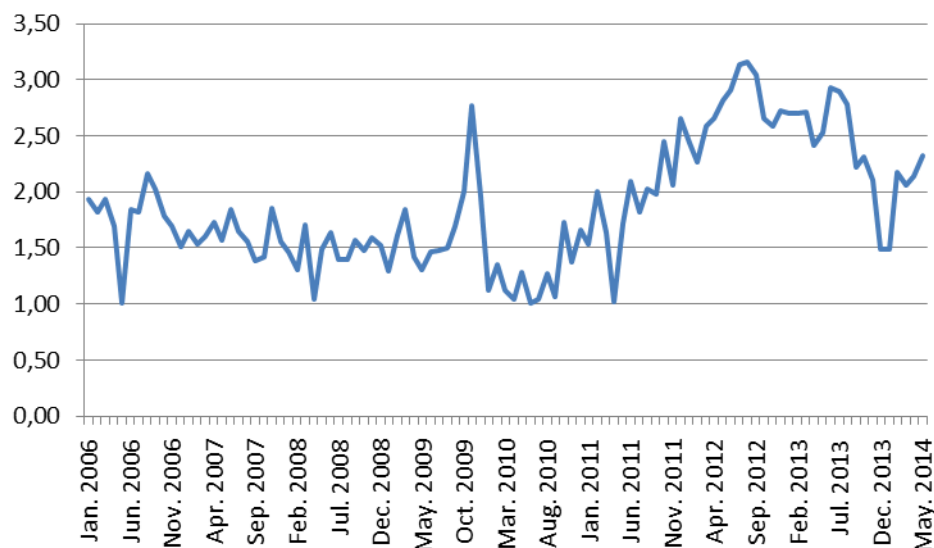
The Danish processing companies purchase their raw material of herring in Denmark or import it. The allocation between the two sources of raw material is unknown. In some cases, however, the Danish companies prefer to use herring from the Atlantoscandic stock, since these fish are often larger and better suited for their products than from in particular the Baltic Sea and the North Sea. Therefore, even though a substantial quantity of herring is caught within the EU, the Danish companies import raw material of herring from Norway. The import from the Atlantoscandic stock is produced partly in the form of prepared and preserved, partly fresh. When imported fresh, the full production is made by Danish companies. The main products of the processing companies in 2011 were prepared and preserved herring (84% of total value), smoked, dried or salted herring (11% of total value), and fresh or frozen fillets/flaps (5% of total value). The processed commodities are either sold for Danish consumption or exported.

The total export of herring amounted to €108 million in 2011 and consisted mostly of prepared and preserved herring (51% of total value), fresh herring (33% of the total value), and smoked, dried or salted herring (9% of the total value). These products were exported to Germany (55%), Poland (15%) and the Netherlands (11%), while Great Britain, Sweden and Norway received another 13% in total.

The Danish consumers spent around €96 million on herring products in 2008, which corresponds to €17 per capita per year. More recent numbers are not available.

The development in the import prices of prepared and preserved herring is shown in Figure 2.

Figure 2: Development in Danish import prices of prepared and preserved herring, 2006-2014, €/kg., current prices



Source: EUROSTAT COMEXT Database.

From 2006 to 2010 the current prices decreased from around €2 per kilo to around €1. After 2010 the prices increased to a level about €3 per kilo in 2012 after which they decrease. Prices are determined by supply and demand at the international market. Supply comes mostly from the dominating Atlantoscandic stock and the total allowable catch on this stock has a strong price effect. Demand is determined by purchasing power and preferences among consumers.

Tariff rules and arrangements

The Most Favoured Nation tariff rate³ on prepared and preserved herring imported into the EU is 20%. The presence of preferential arrangements and tariff quotas means that a tariff of 20% does not always apply. For prepared and preserved herring a tariff on 20% has not been applied at all over the last years. A list of tariff quotas arrangements for prepared and preserved herring that have been in effect for the last years are shown in Table 1⁴.

³ The MFN tariff rate that applies for imports to EU declared for free circulation from all countries that are member of WTO unless more favourable arrangements are in place.

⁴ Other preferential arrangements also apply, but since herring is imported mainly from Norway, these do not affect herring trade significantly. Therefore, these arrangements are not considered in the present note.

Table 1: Overview of tariff quota arrangements of prepared and preserved herring

Arrangement Number	Commodity number	Origin	Period	Tariff quota	Tariff rate
09.0740 ¹	16041291/16041299	Norway	01-01 to 31-12	3,000	0%
09.0750 ²	16041291/16041299	Norway	01-05 to 30-04	8,000	0%
09.0859 ³	16041291/16041299	Norway	01-08-2014 to 31-07-2015	1,400	0%
09.0797 ⁴	16041291/16041299	Iceland	01-01 to 31-12	2,400	0%
09.2792 ⁵	16041299	<i>Ergo Omnes</i>	01-01-2013 to 31-12-2015	15,000	6%

¹Bilateral agreement between EU and Norway, Commission Regulation (EU) no. 3061/1995 amended by 230/2011. ²Bilateral agreement between EU and Norway, EUT L 291 of 09-11-2010 (expired the 31-04-2014) – Com. Regulation 230/2011. ³Bilateral agreement between EU and Norway, Commission Implementing Regulation (EU) No 726/2014. ⁴Commission regulation 499/1997. ⁵Commission Regulation (EU) no. 1220/2012.

Three tariff quotas exist for import of prepared and preserved herring from Norway. One on 3,000 tonnes at a 0% tariff rate that follow the calendar year and another on 8,000 tonnes, also at 0% tariff, that start 1 May. That quota was originally agreed in the bilateral agreement with Norway to 6,000 tonnes, but since there was a delay before the Commission Regulation 230 came into force, the 8,000 tonnes quota was extended until renegotiations of the agreement. The third quota that accounts for Norway on 1,400 tonnes with 0% tariff has recently been implemented with start 1 August 2014. It appears from the negotiation of accession of Croatia to the EU. For Iceland one quota exist on 2,400 tonnes with 0% tariff following the calendar year. Finally, one quota available to imports from all countries on 15,000 tonnes exists with 6% tariff rates. That quota also follows the calendar year.

The pattern of trade reveals that 93% of the total import of prepared and preserved herring to EU28 from outside EU originates in Norway. Hence, neither Iceland, nor other countries are particularly important suppliers of prepared and preserved herring to the EU. Therefore, below only the trade from Norway to the EU is analysed. For Norway, the two quotas on 3,000 and 8,000 tonnes have been important until today. From 1 August 2014 the new quota on 1,400 tonnes is introduced. Furthermore, the *ergo omnes* quota have also been used significantly on import from Norway.

Negotiations between Norway and the EU are ongoing and include all the three quotas on 3,000, 8,000 and 1,400 tonnes. This note identifies the economic effects of different outcomes of these negotiations. It is assumed that the quota on 3,000 tonnes is unchanged, and focus is given to the consequences of different levels of the 8,000 and 1,400 tonnes quotas. The point of departure is the original quota on 6,000 tonnes, i.e. without the temporary extension to 8,000 tonnes, together with the 1,400 tonnes following from the negotiations of accession of Croatia. That is, one option for these two quotas is totally 7,400 tonnes on 0%, as opposed to the 8,000 tonnes quota that has been in force until recently. As the quota on 3,000 tonnes is assumed unchanged, so is the *ergo omnes* quota on 15,000 tonnes with a tariff rate at 6%.

The monthly import of prepared and preserved herring is shown in table 2.

Table 2: Import of prepared and preserved herring to EU28 and Denmark and use of tariff quotas, 2012

	Import quantity		Quota		
	EU28	Denmark	09.0740 (3,000 tonnes 0%)	09.0750 (8,000 tonnes, 0%)	09.2792 (15,000 tonnes, 6%)
January	4,236	2,050	Used	Closed	Used
February	165	18	Closed	Closed	Used
March	356	88	Closed	Closed	Used
April	287	23	Closed	Closed	Used
May	6,157	1,677	Closed	Used	Used
June	687	185	Closed	Used	Used
July	407	70	Closed	Used	Used
August	945	263	Closed	Used	Used
September	604	252	Closed	Closed	Used
October	488	176	Closed	Closed	Used
November	711	245	Closed	Closed	Used
December	362	165	Closed	Closed	Used
Total	15,405	5,212	.	.	.

Source: EUROSTAT COMEXT Database for import. For quotas, see table 2.

The total import of prepared and preserved herring was 15,405 tonnes from Norway in 2012, of which Denmark accounted for 34%. Sweden accounted for 49% and Finland for 14%. The average Danish price of import from Norway was €2.67/kg. Furthermore, it appears that in the beginning of the year, the 3,000 tonnes quota is opened, used and closed in January. Then, from February-April import is undertaken under the *ergo omnes* quota on 15,000 tonnes, thereby paying 6% in tariffs. 1 March, the 8,000 tonnes quota was opened until September where it was closed again. Then, the remaining year the *ergo omnes* quota at 6% was used. I.e. the full MFN tariff on 20% is not paid at all.

Effects of changed tariff quota

The available data does not allow for identifying whether it is the Danish companies, or other EU importers, that use the quotas. Import is only allocated on countries in table 2, not on quotas. But by assuming that Danish companies use the quotas to exactly the same extent as companies from other EU countries, they paid €242,000 in 2012. If the quota on 8,000 tonnes is removed, they would have to pay €682,000 (almost tripled), provided that the trade pattern had remained the same. With this quota changed to respectively 7,400 tonnes, 10,000 tonnes and 15,000 tonnes the corresponding tariff payment would be €275,000 (14% increase), 132,000 (45% decrease) and zero.

The saved tariff payment induces savings of costs of raw material of imported herring and increased profit, whereas extra tariff payment increase costs and reduces company profits. Changed tariff payment might also affect imported quantities and organisation of processing, but first it is assumed that both remain unchanged. Under these assumptions, the effects on profit of the different quota scenarios are identified in table 3 on the basis of the cost structure of an average Danish processing company specialised in either herring or mackerel production⁵. The effects are identified under the following scenarios for the baseline with the quota on 8,000 tonnes:

⁵ There are primarily four companies that process prepared and preserved herring in Denmark: Tenax herring, Kattegat Seafoods, Launis Fiskekonserves and Lykkeberg. Because of statistical confidentiality reasons, the cost structure of these companies is not available individually. Therefore, the costs structure used as a basis for the calculations is an average of both mackerel and herring companies. The most recent year where account statistics are available 2010 is used in the calculations.

1. The quota is removed (reduced to zero tonnes).
2. The quota is reduced to 7,400 tonnes.
3. The quota is increased to 10,000 tonnes.
4. The quota is increased to 15,000 tonnes.

In all scenarios, the quotas on 3,000 tonnes (at 0% tariff) and the 15,000 tonnes (at 6% tariff rate) are assumed unchanged. The effects on net profit in the four scenarios are shown table 3.

Table 3: Effect on net profit of producers of prepared and preserved herring of changing the quota on 8,000 tonnes

	Accounts ¹	Quota at 8,000 tonnes changed to			
		0 tonnes ² Scenario 1	7,400 tonnes Scenario 2	10,000 tonnes Scenario 3	15,000 tonnes Scenario 4
Employment (full-time)	182	.	.	.	.
Turnover (€Million)	88.5	.	.	.	.
<u>Cost items (€Million)</u>					
Salary costs	-12.7	.	.	.	.
Cost of raw material of herring	-40.5	.	.	.	.
Tariff costs on herring	-0,2	-0.7	-0,3	-0,1	0
Other production costs	-28.6	.	.	.	.
Depreciation	<u>-2.9</u>	.	.	.	.
Net profit	3.1	2.5	3.0	3.2	3.3
- Change in net profit		(-0.5)	-0.1	+0.1	+0.2

Note: 1. Account numbers are calculated on the basis of the 14 firms that produced herring and mackerel in 2010, with all items scaled after turnover of prepared and preserved herring (see figure 1).

2. The €2.5 Million is identified as $3.1 - (-0.7 - (-0.2))$, with -0.7 representing the tariff cost of the Danish companies identified as $((15,405 - 8,000 - 3,000) * 2,67 * 0,06) / 1,000 = €0.7$ Million.

Source: Department of Food and Resource Economics (2013), Economic Situation of Danish Fishermen 2013 – Fish processing, IFRO Commissioned work to the Ministry of Food, Agriculture and Fisheries, no. 27.

Given the assumptions of an unchanged cost structure and assuming that import quantities remain unchanged, it appears that the net profit with a quota on 7,400 tonnes will be reduced with € 0.1 Million to € 3.0 Million for the affected companies, corresponding to a 3% reduction in net profit. However, the effect on net profit is larger if the quota is removed (€0.5 Million, 16% reduction) or increased to 15,000 tonnes (€ 0.2 Million, 6% increase).

The above effects have been identified assuming unchanged import quantities. However, even though tariff quotas do not ban import, it does increase the cost of import. That might lead to that companies with reduced quotas do not find it economically viable anymore to import at all. That is, they cannot earn on import without the quota.

That quantities of prepared and preserved herring might be affected by changing quotas is underlined by the fact that imports in month where quotas on 0% are opened on average is six times higher than in month when it is closed (849 versus 138 tonnes). With the quota on 3,000 tonnes at 0% tariff and with 15,000 tonnes at 6% tariff, the EU importers of prepared and preserved herring will, with the current import on 15,405 tonnes, not pay 20% tariffs on any part of the import. Hence, their choice is whether to replace the import without tariffs with the same amount of which they pay 6%, or they simply reduce import correspondingly. Similarly, their choice with an increased quota is whether to replace with import on 0% or increase their import with the amount of the increased quota. With a replacement, the economic consequences for the Danish processors are sketched in table 3.

If the EU importers alternatively change their import due to the changed quota, the consequences are identified below.

If the quota on 8,000 tonnes is fully removed (scenario 1), the Danish companies will, with a constant share of total EU import, reduce import with 2,720 tonnes. With constant prices, raw material import is reduced with €7.3 Million (12%). That will, with an unchanged production organisation and without substitution to other raw material, lead to the same percentage reduction in turnover and full-time employment. That corresponds to reductions on, respectively, €15.9 Million and 33 persons⁶.

The consequences of reducing the quota to 7,400 tonnes (scenario 2) are, with the same assumptions, that factory activities are reduced 1%, corresponding to a reduced turnover and employment on €1.2 Million and 2 persons.

In scenario 3, the quota is increased to 10,000 tonnes, i.e. with 2,000 tonnes. With the same assumption as above, that increase factory activities with 4%, leading to increases in turnover and employment on €3.9 Million and 8 persons, respectively.

Finally, if the quota is increased to 15,000 tonnes, i.e. with 7,000 tonnes (scenario 4), that leads under unchanged circumstances to increases in factory activities with 16%. Hence, turnover and employment increase with €14.2 Million and 29 persons, respectively.

It is emphasized that the results are subject to some uncertainty due to the assumptions. The effects might be overestimated, since companies can adjust import, production level and organisation. On the other hand, effects might be underestimated since companies can only use their full capacity in an economical optimal way in the five months a year when the quotas are opened.

Conclusion

Given the assumption, it can be concluded that:

- An increase of the tariff quota on prepared and preserved herring improve the economics and increase employment in Danish companies, where a reduced tariff quota affects Danish companies negatively.
- Removing the tariff quota on 8,000 tonnes with 0% tariff rate, will reduce the net profit with €0.5 Million if the companies replace with import on 6% tariffs. If companies reduce their activity, their turnover and employment will be reduced up to €15.9 Million (from a total of €88.5 Million, corresponding to an 18 % reduction) and up to 33 persons (from a total of 182 persons, corresponding to an 18 % reduction).
- Increasing the tariff quota to 15,000 tonnes increase net profit with €0.2 Million if the companies just replace with import on 0% tariffs. If companies increase their activity, their turnover and employment will rises up to €14.2 Million (from a total of €88.5 Million, corresponding to an increase on 16 %) and up to 29 persons (from a total of 182 persons, corresponding to an increase on 16 %).
- Changing the tariff quota between the two above extremes leads to effects that are smaller than above.

⁶ The reduced quantity on 2,720 tonnes is equal to $0.34 \cdot 8,000$, the 0.34 being the Danish share of EU import (see table 2). The €7.3 Million is $2,720 \cdot 1,000 \cdot 2.67$, with €2.67 being the average import price of prepared and preserved herring from Norway. The €7.3 Million corresponds to 18% of the cost of raw material of herring on €40.5 Million (see table 3). The €15.9 Million and 33 persons correspond to 18% of current turnover and employment (according to table 3).